

ABSTRACT

Indium Nitride (InN) and Indium-rich Indium Gallium Nitride (InGaN) quantum dots embedded in single and multiple $\text{In}_x\text{Ga}_{1-x}\text{N}/\text{In}_y\text{Ga}_{1-y}\text{N}$ quantum wells (QWs) are formed by using TMIn and/or Triethylindium (TEIn), Ethyldimethylindium (EDMIn) as
5 antisurfactant during MOCVD growth, wherein the photoluminescence wavelength from these dots ranges from 480nm to 530nm. Controlled amounts of TMIn and/or other Indium precursors are important in triggering the formation of dislocation-free QDs, as are the subsequent flows of ammonia and TMIn. This method can be readily used for the growth of the active layers of blue, and green ~~and amber~~ light emitting diodes (LEDs).